***Informatics, Ch 4, Data Analytics: Presenting the findings***

***Testing, p 232***

1. ***What is the purpose of testing? List the steps involved.***The purposes of testing checks that a solution produces correct output and does what it should do.  
   1 – Decide which tests will be conducted   
   2 – Create suitable test data  
   3 – Determine expected results  
   4 – Conduct the test  
   5 – Record the actual test results  
   6 – Correct any errors
2. ***List the different testing types.***- Informal (alpha)  
   - User Acceptance (beta)  
   - Component  
   - Integration  
   - System  
   - Installation  
   - Compatibility  
   - Useability  
   - Accessibility
3. ***What constitutes good test data?***Good test data includes:  
   - Valid Data – data that is perfectly acceptable, reasonable, and fit to be processed.  
   - Valid but unusual data – data that should not be rejected even though it seems odd. A 10-year-old might, once a century, enrol in university. Validation that rejected the young genius’ enrolment would cause embarrassment.  
   - Invalid Data – to test the code’s validation routines. For example, if people must be 18 years old to be given a credit card, test data should include people *under* 18 so they can be seen to be rejected.  
   - Boundary Condition Data – data that is on the borderline of some critical value where the behaviour of the code should change. These ‘tipping point’ errors are a frequent cause of logical errors in programming.
4. ***What areas should be tested in a MMOS?***
5. - Media and Plug-ins  
   - Hyperlinks  
   - Links to external services  
   - Readability  
   - Calculations  
   - Loading times  
   - Browser compatibility  
   - CSS  
   - Accessibility  
   - Dynamic features  
   - Load capacity

***Testing table, p 235***

1. ***What is the purpose of a testing table?***The purpose of a testing table is to record evidence of functionality testing.

***Evaluation, p 237***

1. ***What is the purpose of evaluation as the final stage of the problem-solving methodology?***The purpose of evaluation as the final stage of the PSM is that it checks how well the solution is satisfying the needs of the user for which it was originally created.
2. ***Distinguish between evaluation & testing.***1 – Evaluation is not the same as testing; its purpose is distinctly different.   
   2 – Evaluation does not test that a solution is working properly. That should have been done during testing.  
   3 – Evaluation does not test data to check that the output is accurate. That should have been done during testing.  
   4 – Evaluation does not stopwatch to time how long a process takes. That should have been done during testing.  
   5 – Evaluation does not perform checks with immediate results, such as pulling out the power plug to see if a system loses data. That should have been done during testing.  
   6 – Evaluation looks at a solution’s performance over time in terms of the evaluation criteria.
3. ***When are the evaluation criteria determined? What should they be based on?***The evaluation criteria are determined during the design phase of the problem-solving methodology and are based on the most important qualities that the solution is expected to have when it is designed.
4. ***Distinguish, with the use of an example, between criteria to evaluate efficiency and effectiveness.*Efficiency** can be measured in terms of speed or productivity (work produced in a given time) profitability (income generated versus running costs) and labour requirements (how much labour is required to achieve its productivity levels.  
   **Effectiveness** includes completeness, readability, attractiveness, clarity, accuracy, accessibility, timeliness, communication of message, relevance and useability.

***Evaluation methods, p 238***

1. ***Distinguish between objective and subjective results?*Objective:** Fact-based, measurable – results are solid facts that are hard to argue with. Measure whenever you can.  
   **Subjective:** results – emotions, opinions, personal judgements – can be gained from interviews, questionnaires and surveys. These should only be used when objective measurement is not possible or practical, such as to evaluate how comfortable users feel when using a multimodal solution.
2. ***When should a solution be evaluated?***Evaluation occurs after the solution has been in regular use for some time so it is well ‘bedded in’ and its users are familiar and comfortable with it. A few months of regular, daily use is typical. Evaluating a solution too soon can lead to negative feedback of users are not yet used to it and are slow and prone to making errors. Later, when they are comfortable and skilled with the solution, their feedback may be much more possible.

***Assessing your project plan, p 239***

1. ***What type of questions can be answered in evaluating your project plan?***Questions such as:  
   1 – Did the project finish on time?  
   2 – What tasks delayed your project? Were these delays not anticipated?  
   3 – Could lessons be learned to help the next project finish on time?  
   4 – Did the project finish on budget?  
   5 – What assumptions did we get wrong?  
   6 – Why did this tasks cost far more than expected?  
   7 – Why were new requirements being added just weeks before the system was due to go online? Was our analysis a failure?  
   8 – Why did the first three prototypes blow up? Was the design team under-skilled, overworked, under-equipped or working to an impossible deadline?
2. ***In evaluating your project plan evaluation criteria are used to indicate how successful it was in managing your activities. What are some of the criteria you can use?***

**Completeness:** Were any significant tasks omitted from the WBS? Were resources included? Was it annotated when required?  
**Maintainability:** How easy was it to modify the Gantt chart to keep it up to date with reality?  
**Accuracy:** Were tasks correctly identified and marked as dependent or concurrent? Were tasks in the right sequence? Were tasks in the right sequence? Were time estimates realistic?  
**Readability:** Was it easy to see all tasks and their dependencies? Was the chart and its text of a readable size? Were colour choices appropriate?